CLAIM AMENDMENTS

1. *(Currently Amended)* ~~A method of obtaining genetically altered primate pluripotent stem (pPS) cells or progeny thereof, comprising:~~

~~a) providing a composition of pPS cells essentially free of feeder cells; and~~

~~b) transferring a polynucleotide into pPS cells in the composition~~

A method for producing genetically altered human embryonic stem cells, comprising:

a) obtaining a culture comprising human embryonic stem cells proliferating on an extracellular matrix instead of feeder cells; and

b) transfecting at least some of the cells in the composition with a polynucleotide, thereby producing genetically altered stem cells that are undifferentiated.

2. *(Original)* The method of claim 1, further comprising preferentially selecting cells that have been genetically altered with the polynucleotide.

3. *(Currently Amended)* The method of claim 1, wherein the ~~hPS~~ human embryonic stem cells are cultured in an environment comprising extracellular matrix components and a conditioned medium produced by collecting medium from a culture of feeder cells.

4. *CANCELLED*

5. *(Currently Amended)* The method of claim 1, wherein the polynucleotide comprises a protein encoding region operably linked to a promoter that promotes transcription of the encoding region in an undifferentiated ~~pPS~~ embryonic stem cell.

6. *(Currently Amended)* The method of claim 1, wherein the polynucleotide is selected from ~~the group consisting of~~ an adenoviral vector, a retroviral vector, and a DNA plasmid complexed with positively charged lipid.

7. *CANCELLED*

8. *(Currently Amended)* ~~An undifferentiated human pluripotent stem (hPS) cell genetically altered with a polynucleotide~~
A cell population comprising undifferentiated human embryonic stem cells, some of which have been genetically altered, wherein the population consists essentially of human cells.

9. *(Currently Amended)* ~~A stably transfected undifferentiated human pluripotent stem cell~~
A cell population comprising undifferentiated human embryonic stem cells, some of which have been stably transfected, wherein the population consists essentially of human cells.

10. *(Currently Amended)* ~~A population of primate pluripotent stem (pPS) cells, in which at least 25% of the undifferentiated pPS cells have been transfected with a polynucleotide, or are the progeny of such cells that have inherited the polynucleotide~~
A cell population comprising undifferentiated human embryonic stem cells, of which at least 25% have been genetically altered, wherein the population consists essentially of human cells.

11. *(Currently Amended)* A ~~population of~~ method for producing genetically altered differentiated cells, ~~obtained by~~ comprising differentiating the cells of claim 10.

12. *CANCELLED*

13. *(New)* The cell population of claim 10, in which at least 90% of the undifferentiated pPS cells have been genetically altered.

14. *(New)* The cell population of claim 9, in which at least 25% of the undifferentiated pPS cells have been stably transfected.

15. *(New)* The cell population of claim 9, in which at least 90% of the undifferentiated pPS cells have been stably transfected.

16. *(New)* A method for producing genetically altered differentiated cells, comprising differentiating the cells of claim 9.

17. *(New)* A method for producing genetically altered differentiated cells, comprising:

a) obtaining a culture comprising human embryonic stem cells proliferating on an extracellular matrix instead of feeder cells;

b) transfecting at least some of th cells in the composition with a polynucleotide, thereby producing genetically altered cells; and

c) causing the genetically altered cells to differentiate.

18. *(New)* The method of claim 8, whereby the genetically altered cells are differentiated into neural cells.

19. *(New)* The method of claim 8, whereby the genetically altered cells are differentiated into hepatocytes.

20. *(New)* The method of claim 17, whereby the genetically altered cells are differentiated into neural cells.

21. *(New)* The method of claim 17, whereby the genetically altered cells are differentiated into hepatocytes.

22. *(New)* The method of claim 1, wherein the polynucleotide encodes a drug resistance gene.

23. *(New)* The method of claim 2, wherein the selecting comprises culturing the cells in the presence of a drug to which genetically altered cells in the population are resistant.